Extensible Decimal Identification System for Ordered Nodes

Abstract

An extensible identification system for nodes in a hierarchy is described wherein each node is assigned a concatenation of decimal based values. The values assigned uniquely identify the node, provides an order for the node, and identifies its parent, child, and sibling relationships with other nodes Furthermore, the IDs assigned can be encoded to be byte comparable. Furthermore, the ID's assigned to nodes need not be modified when changes (adding/deleting a child node or a subtree of nodes) are made in the hierarchy. Additionally, in the event of such a change, the order and relationships between the parent, child, and sibling nodes are retained.